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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/761,451	01/16/2001	Joseph W. Tsang	10982033-1	5127

7540 05/12/2003

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EXAMINER

SHOSHO, CALLIE E

ART UNIT PAPER NUMBER

1714

DATE MAILED: 05/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/761,451

Applicant(s)

TSANG ET AL.

Examiner

Callie E. Shosho

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 12/20/02 and teleph.interview of 5/2/03.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 10-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 10-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☒ Interview Summary (PTO-413) Paper No(s) 12
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

1. This Office Action, which is supplemental to the Final Office Action mailed 3/13/03, Paper No. 11, includes the status of pending claims 10-15 (see paragraphs 5-8 below) which were inadvertently not incorporated into the previous office action as noted by applicants (see attached Interview Summary).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 16-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(a) Claims 16 and 22 each recite that the first reactive component reacts with the second reactive component which is "selected from the group consisting of polyol, polyvinyl alcohol, and base catalysts". The scope of the claims is confusing because it is not clear what type of polymer is formed or how the polymer is formed if the reactive monomer is, for instance, isocyanate, and the second component is a base catalyst. Clarification is requested.

(b) Claim 20, which depends on claim 16, and claim 26, which depends on claim 22, each recite the limitation "said monomer" in line 1. There is insufficient antecedent basis for this

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limitation in each of the claims given that there is no recitation of "monomer" in either claim 16 or claim 22.

(c) Claim 21, which depends on claim 16, and claim 27, which depends on claim 22, each recite the limitation "said concentration" in line 1. There is insufficient antecedent basis for this limitation in each of the claims given that there is no recitation of "concentration" in either claim 16 or claim 22. Should the dependencies of claims 21 and 27 be changed to claims 20 and 26 respectively?

(d) Claim 23-27, which each ultimately depend on claim 22, are drawn to a method, while claim 22, is drawn to a combination. Thus, the scope of each of claims 23-27 is confusing because it is not clear what invention is being claimed – a combination or a method. Should the recitation in each of claims 23-27 of "The method" be changed to "The combination"?

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 10 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kashiwazaki et al. (U.S. 5,640,187) in view of Lawrence et al. (U.S. 6,280,027) and Thompson et al. (U.S. 6,341,856).

The rejection is adequately set forth in paragraph 10 of the office action mailed 2/26/02, Paper No. 5, and is incorporated here by reference.

6. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kashiwazaki et al. in view of Lawrence et al. and Thompson et al. as applied to claims 10 and 14-15 above, and further in view of Kurabayashi et al. (U.S. 5,985,975).

The rejection is adequately set forth in paragraph 11 of the office action mailed 2/26/02, Paper No. 5, and is incorporated here by reference.

7. Claims 10 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kashiwazaki et al. (U.S. 5,640,187) in view of Lawrence et al. (U.S. 6,280,027) and Thompson et al. (U.S. 6,341,856).

The rejection is adequately set forth in paragraph 12 of the office action mailed 2/26/02, Paper No. 5, and is incorporated here by reference.

8. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kashiwazaki et al. in view of Lawrence et al. and Thompson et al. as applied to claims 10 and 14-15 above, and further in view of Kurabayashi et al. (U.S. 5,985,975).

The rejection is adequately set forth in paragraph 13 of the office action mailed 2/26/02, Paper No. 5, and is incorporated here by reference.

9. Claims 16, 20-22, and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kashiwazaki et al. (U.S. 5,640,187) in view of Lawrence et al. (U.S. 6,280,027) and Thompson et al. (U.S. 6,341,856).

Kashiwazaki et al. disclose method for printing on a print media including printing ink jet ink on the print media and printing a fixative, wherein the fixative comprises 0.001-20% polyurethane, on the print media wherein the method comprises providing at least one cartridge containing at least one fixative and providing at least one cartridge containing ink jet ink, and printing the fixative followed by printing the ink whereby the polyurethane is printed on the print media to fix the ink. Thus, it is seen that Kashiwazaki et al. disclose combination of fixative and ink (col.2, lines 18-27, col.6, lines 25-29, col.7, lines 18-19 and 23-25, and col.19, lines 19-24).

The difference between Kashiwazaki et al. and the present claimed invention is the requirement in the present claims of (a) two-part system and (b) glass transition temperature and melting temperature of the polyurethane.

With respect to difference (a), it is noted that the present claims require a method or combination comprising a reactive monomer such as isocyanate and second component such as polyol wherein the reactive monomer and second component react to form a polymer on the printing medium while Kashiwazaki et al. disclose jetting a fixative comprising polyurethane onto a printing medium. It is well known that polyurethane is formed by the reaction of isocyanate and polyol.

Thompson et al. disclose reacting 2-40% polyisocyanate with polyol and further disclose storing polyol and polyisocyanate in separate reservoirs, i.e. cartridges, in order to prevent premature reaction between the two components (col.5, lines 61-62 and col.6, lines 18-20). It would have been within the skill level of one of ordinary skill in the art to recognize that such premature reaction would result in formation of undesirably high molecular weight or highly crosslinked polymer before printing wherein such polymer would clog the printer nozzles.

With respect to difference (b), Kashiwazaki et al. disclose the use of polyurethane, but do not disclose the glass transition temperature or melting temperature of the polymer. Lawrence et al., which is drawn to ink jet printing process comprising printing ink onto polyurethane layer, disclose the use of polyurethane which has glass transition temperature of -50 to 100°C in order to enhance the fixability of the printed image which produces an image which does not smear when subjected to water (col. 1, line 66-col. 2, line 4 and col. 4, lines 63-64).

Further, with respect to the melting temperature, Thompson et al. disclose that ink jet printers normally operate at temperatures of 50 - 150°C (col. 10, lines 38-39). Given that the fixative of Kashiwazaki et al. is printed using an ink jet printer and further given that in order that the ink be properly ejected from the nozzles of the ink printer the fixative must be in liquid form, it would have been obvious to one of ordinary skill in the art to use polyurethane which melts at 50 - 150°C in order that the fixative can be properly liquefied and ejected from the ink jet printer without clogging the printer nozzle.

In light of the above, it therefore would have been obvious to one of ordinary skill in the art to use two-part system in Kashiwazaki et al. wherein polyol and polyisocyanate are kept in separate reservoirs and react on the printing medium to form the polyurethane in order to prevent premature reaction and further it would have been obvious to one of ordinary skill in the art to use polyurethane having glass transition temperature and melting temperature as described above in order to produce fixative which would enhance the fixability of the printed image as well as eject from printer nozzle properly, and thereby arrive at the claimed invention.

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10. Claims 17-19 and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kashiwazaki et al. in view of Laurence et al. and Thompson et al. as applied to claims 16, 20-22, and 26-27 above, and further in view of Kurabayashi et al. (U.S. 5,985,975).

The difference between Kashiwazaki et al. in view of Lawrence et al. and Thompson et al. and the present claimed invention is the requirement in the claims of different color inks.

Kashiwazaki et al., disclose underprinting an ink composition with fixative. However, there is no disclosure of using the fixative with a set of different color inks as presently claimed.

Kurabayashi et al. disclose using fixative with a set of inks including yellow, cyan, magenta, and black inks in order to produce a multicolor image with no intercolor bleed (col.3, lines 23-25 and col.4, lines 37-39).

In light of the above, it therefore would have been obvious to one of ordinary skill in the art to use fixative of Kashiwazaki et al. with set of different color inks in order to prevent bleed between the inks, and thereby arrive at the claimed invention.

Response to Arguments

11. Applicants' arguments filed 12/12/02 have been fully considered but they are not persuasive.

Specifically, applicants argue that Kashiwazaki et al. is drawn to a one-part system while the present claims are directed to a two-part system and that none of the secondary references discloses or suggests using such two-part system.

It is agreed that Kashiwazaki et al. disclose one-part system. In order to meet the limitation of two-part system, Kashiwazaki et al. is combined with Thompson et al. which is

drawn to ink jet ink composition comprising polyisocyanate and polyol. Thompson et al. disclose that the polyol is contained in the ink while the polyisocyanate is stored in another ink reservoir or cartridge, i.e. two-part system, in order to prevent premature reaction between the polyisocyanate and the polyol (col.4, lines 24-26 and 57-58 and col.6, lines 18-20. It would have been within the skill level of one of ordinary skill in the art to recognize that such premature reaction would result in formation of undesirably high molecular weight or highly crosslinked polymer before printing wherein such polymer would clog the printer nozzles.

Applicants disclose on pages 4-6 of the amendment filed 12/20/02, the advantages of two-part system as compared to one-part system. These are the same advantages as set forth in the declaration filed 6/26/02, Paper No. 8. Thus, examiner's position with respect to the discussion on pages 4-6 of the present specification is the same as set forth with respect to the declaration (see page 9 of the office action mailed 9/25/02, Paper No. 9), namely that applicants recitation of the advantages of the two-part system is not successful in establishing unexpected or surprising results over the cited prior art given that while applicants set forth several advantages regarding the presently claimed two-part system, applicants do not provide any clear and convincing factual evidence to support this position. That is, applicants have provided conclusionary statements regarding the superiority of two-part fixative system without supporting evidence, i.e. quantitative data. As set forth in MPEP 716.01(c), "it is well settled that unexpected results must be established by factual evidence". Further, as set forth in *Ex parte Gregory*, 21 USPQ2d 1058 (Bd. Pat. App. & Inter. 1991), the courts held that "conclusory statements that results were "unexpected" unsupported by objective factual evidence, were considered but were not found to be of substantial evidentiary value". Further, it is noted that

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"the arguments of counsel cannot take the place of evidence in the record", *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965).

As stated above, it is agreed that Kashiwazaki et al. do not disclose two-part system. Further, it is agreed that Lawrence et al. do not disclose two-part system. However, note that Lawrence et al. is used as teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather this reference teaches a certain concept, namely the glass transition of polyurethane, and in combination with the primary reference, discloses the presently claimed invention. If the secondary reference contained all the features of the present claimed invention, it would be identical to the present claimed invention, and there would be no need for secondary references. With respect to Thompson et al., given that Thompson et al. disclose placing polyisocyanate in separate ink reservoir or cartridge from polyol until reaction occurs upon printing, it appears that Thompson et al. disclose two-part system. Given the motivation for using two-part system disclosed by Thompson et al. as discussed above, it would have been obvious to one of ordinary skill in the art to use two-part system in Kashiwazaki et al.

Applicants also argue that the examiner has ignored the teachings of the references as a whole and has attempted to piece together the claimed invention using the present claims as a guide.

However, it is the examiner's position that the references as a whole have been considered. Kashiwazaki et al. disclose one-part system wherein the fixative comprises polyurethane. Thompson et al., which is drawn to ink jet inks, disclose use of two-part system,

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i.e. polyol contained in ink with polyisocyanate stored separately in another ink reservoir in order to prevent premature reaction between the two components. It is within the skill level of one of ordinary skill in the art to recognize that such premature reaction would result in formation of undesirably high molecular weight or highly crosslinked polymer before printing wherein such polymer would clog the printer nozzles. Thus, in light of the motivation for using two-part system as disclosed by Thompson et al., it therefore would have been obvious to one of ordinary skill in the art to combine Kashiwazaki et al. with Thompson et al.

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

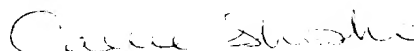
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 703-305-0208. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 703-306-2777. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Callie E. Shosho
Examiner
Art Unit 1714

CS
May 9, 2003